MELBOURNE
IRON AND STEEL MILLS
PTY. LTD.

ESTABLISHED
1860

MELBOURNE IRON & STEEL MILLS PTY. LTD.

Incorporating
The Lion Rolling Mills Pty. Ltd.
The Victoria Iron Rolling Co. Pty. Ltd.

WORKS: SOUTH MELBOURNE & BROOKLYN, VICTORIA

GOVERNMENT CONTRACTORS

WE ROLL

SPRING STEEL   ANY QUALITY

ALLOY STEEL   ANY QUALITY

MILD STEEL   AUSTRALIAN STANDARD AND OTHER QUALITIES

WROUGHT IRON   MERCHANT AND SPECIAL NUT AND CHAIN QUALITIES, ALSO YORKSHIRE QUALITY

SPECIAL SECTIONS FOR STEEL WINDOWS

SPECIAL SECTIONS FOR HARVESTER TRADE

BARS FOR REINFORCED CONCRETE

ROLLS CUT FOR ANY SECTION IF ORDERED
IN SUFFICIENT QUANTITY

1936

SPECIAL NOTICE

We carry a stock of finished Steel and Iron of about 1,000 tons, and can usually supply ordinary orders from this source. If immediate delivery is required of material to a particular length not in stock we can roll at a day or two's notice.

OUR PRICE FOR BARS CUT TO LENGTH IS, GENERALLY SPEAKING, THE SAME AS THE PRICE FOR STOCK LENGTHS. THE ADVANTAGE TO THE CUSTOMER IS OBVIOUS.

MOST OF THE SECTIONS
WE ROLL
CAN BE MADE IN
ANY QUALITY
OF STEEL OR IRON

A margin of two-and-a-half per cent. above or below must
be allowed in the weight and dimensions of
all Rolled Sections

Telephone : M 2231, 3 lines
Telegrams and Cables : "Steelmill," Melbourne

SPECIAL STEELS

SPRING STEEL OF ANY QUALITY OR SIZE, OIL OR WATER HARDENING, FOR MOTOR CAR, RAILWAY OR ANY OTHER PURPOSE

STEEL FOR RADIO & ELECTRICAL WORK

AXLE & TAIL SHAFT STEEL

BESCOM   ,,

CASE HARDENING   ,,

EXTRA SOFT MILD   ,,

FORGING   ,,

NICKEL   ,,

PLOW   ,,

VALVE   ,,

INGOT IRON

Tell us what you want your Steel to do and we will give you what is required

FORGINGS MADE OF ANY SIZE
UP TO SIX TONS
OF ANY
QUALITY DESIRED

———

BOLTS AND NUTS
UP TO
ANY SIZE

———

DOGSPIKES

———

FISHPLATES

———

ROLLS CUT FOR
SPECIAL SECTIONS

MODERN TESTING MACHINE AND
CHEMICAL LABORATORIES

FORM PART OF OUR EQUIPMENT
AND ANY TESTS OR ANALYSES
DESIRED BY CLIENTS OF THEIR
OWN OR OUR STEEL WILL BE
GLADLY CARRIED OUT

Our Technical Staff is available
to give any information
Clients desire

IRONITE

The best wearing surface that can be
put on a concrete floor is
IRONITE

It is made by us from Rolling Mill
Furnace Slag

Any reputable floor layer will guarantee
Ironite for years

EXAMPLES CAN BE INSPECTED

Best Proportions :

$3\frac{1}{2}$ parts **IRONITE**

I part Cement

NO SAND REQUIRED

WE HAVE AMPLE SUPPLIES

LIST OF SECTIONS ROLLED

Angles maximum thickness may be oversize

EQUAL ANGLES

$4 \times 4 \times \frac{1}{2}$ to $\frac{5}{8}$	$2 \times 2 \times \frac{3}{16}$ to $\frac{3}{8}$
$3\frac{1}{2} \times 3\frac{1}{2} \times \frac{3}{8}$ to $\frac{5}{8}$	$1\frac{3}{4} \times 1\frac{3}{4} \times \frac{3}{16}$ to $\frac{3}{8}$
$3 \times 3 \times \frac{1}{4}$ to $\frac{5}{8}$	$1\frac{1}{2} \times 1\frac{1}{2} \times \frac{3}{16}$ to $\frac{3}{8}$
$2\frac{1}{2} \times 2\frac{1}{2} \times \frac{1}{4}$ to $\frac{1}{2}$	$1\frac{1}{4} \times 1\frac{1}{4} \times \frac{3}{16}$ to $\frac{1}{4}$
$2\frac{1}{4} \times 2\frac{1}{4} \times \frac{1}{4}$ to $\frac{3}{8}$	$1 \times 1 \times \frac{3}{16}$ to $\frac{1}{4}$

SQUARE ROOT ANGLES

See special sections, page 11

UNEQUAL ANGLES

$5 \times 2\frac{1}{2} \times \frac{3}{8}$ to $\frac{1}{2}$	$1\frac{1}{2} \times 1 \times \frac{1}{4}$
$4 \times 3 \times \frac{3}{8}$ to $\frac{5}{8}$	$1\frac{1}{2} \times \frac{3}{4} \times \frac{1}{4}$
$3\frac{1}{2} \times 3 \times \frac{3}{8}$ to $\frac{5}{8}$	$1\frac{1}{4} \times \frac{3}{4} \times \frac{3}{16}$
$3 \times 2\frac{1}{2} \times \frac{1}{4}$ to $\frac{5}{8}$	$1 \times \frac{5}{8} \times \frac{1}{8}$
$3 \times 2 \times \frac{1}{4}$ to $\frac{1}{2}$	

TEES

$4 \times 3 \times \frac{3}{8}$	$2\frac{1}{4} \times 2\frac{1}{4} \times \frac{3}{8}$
$3\frac{1}{2} \times 3\frac{1}{2} \times \frac{3}{8}$ & $\frac{1}{2}$	$2 \times 2 \times \frac{1}{4}$ & $\frac{5}{16}$
$3 \times 3 \times \frac{3}{8}$ & $\frac{1}{2}$	$1\frac{3}{4} \times 1\frac{3}{4} \times \frac{5}{16}$
$2\frac{1}{2} \times 2\frac{1}{2} \times \frac{1}{4}$, $\frac{5}{16}$ & $\frac{3}{8}$	$1\frac{1}{2} \times 1\frac{1}{2} \times \frac{1}{4}$

SPECIAL SECTIONS SHOWN ON PAGES 11 TO 37

Rolls cut for any section if ordered in sufficient quantity

LIST OF SECTIONS ROLLED

SQUARE ROOT TEES

See special sections, page 12

FLATS

Any size from $\frac{1}{2} \times \frac{1}{8}$ to $6 \times 2\frac{1}{2}$ Round or Square Edge

,,　　,,　　,,　　$6 \times \frac{1}{8}$ to 7×1　　,,　　,,　　,,

$8 \times \frac{1}{4}$ & $9 \times \frac{1}{4}$　and thicker

NUT IRON

Any size from $\frac{5}{8} \times \frac{5}{16}$ to $2 \times 1\frac{1}{2}$

Larger sizes by special arrangement

ROUNDS

All sizes from $\frac{3}{8}$ to $3\frac{3}{4}$

SQUARES

All sizes from $\frac{5}{16}$ to $3\frac{1}{4}$

and $3\frac{7}{8}$, 4 and $4\frac{1}{4}$ with bevel corners

BEVEL, FIRE or SCREEN BARS

See special sections, pages 13, 23, 28

SPECIAL SECTIONS SHOWN ON PAGES 11 TO 37

Rolls cut for any section if ordered in sufficient quantity

LIST OF SECTIONS ROLLED

ROUND EDGE FOR TYRES

See special sections, page 13

CONVEX SQUARE EDGE

See special sections, page 14

CONVEX FEATHER EDGE

See special sections, pages 14, 22, 26

CHANNELS

See special sections, pages 15, 16, 20

VEHICLE TYRE CHANNELS

See special sections, page 22

BLOOMS AND BILLETS

2 to 4 inches square up to 20 feet long

5 and 6 inches square, 6×4, 8×4 and 9×4 up to 13 feet long

SPECIAL SECTIONS SHOWN ON PAGES 11 TO 37

Rolls cut for any section if ordered in sufficient quantity

INDEX TO SPECIAL SECTIONS

MANY SECTIONS NUMBERED THUS ⑥
FOR ORDERING.

* Indicates sections usually stocked.

SPECIAL ANGLES

Approximate weight per foot below each section

* Indicates sections usually stocked

SQUARE ROOT ANGLES

*1 × 1 × 1/8 × .8 lb. (22)   *3/4 × 3/4 × 1/8 × .58 lb. (21)
*7/8 × 7/8 × 1/8 × .74 lb. (27)   *5/8 × 5/8 × 1/8 × .48 lb. (20)
*1/2 × 1/2 × 1/8 × .37 lb. (19)

ROUND BACK ANGLE
Full Size

1.85 lbs.

A.C. ANGLE
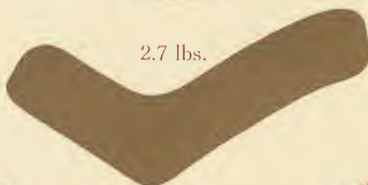
2.7 lbs.

Full Size

OBTUSE ANGLE

5.2 lbs.

Full Size

TEES

SQUARE ROOT TEES

Table dimension given first

*$1\frac{1}{2} \times 1\frac{1}{2} \times \frac{3}{16} \times 1.7$lbs. ③   *$1 \times 1 \times \frac{1}{8} \times .85$lb. ⑪

*$1\frac{1}{4} \times 1\frac{1}{2} \times \frac{3}{16} \times 1.5$,, ㉛   *$\frac{7}{8} \times 1\frac{3}{8} \times \frac{1}{8} \times 1$,, ⑰

*$1\frac{1}{4} \times 1\frac{1}{4} \times \frac{3}{16} \times 1.4$,, ②   *$\frac{7}{8} \times 1\frac{1}{8} \times \frac{11}{64} \times 1$,, ①

*$\frac{7}{8} \times 1 \times \frac{1}{8} \times .8$ lb. ⑱

STANDARD TEES

$4 \times 3 \times \frac{3}{8}$	$2\frac{1}{4} \times 2\frac{1}{4} \times \frac{3}{8}$
$3\frac{1}{2} \times 3\frac{1}{2} \times \frac{3}{8}$ & $\frac{1}{2}$	$2 \times 2 \times \frac{1}{4}$ & $\frac{5}{16}$
$3 \times 3 \times \frac{3}{8}$ & $\frac{1}{2}$	$1\frac{3}{4} \times 1\frac{3}{4} \times \frac{5}{16}$
$2\frac{1}{2} \times 2\frac{1}{2} \times \frac{1}{4}$, $\frac{5}{16}$ & $\frac{3}{8}$	$1\frac{1}{2} \times 1\frac{1}{2} \times \frac{1}{4}$

SPECIAL TEE

* Indicates sections usually stocked

SPECIAL SECTIONS

ROUND EDGE FOR TYRES

Widths given are on flat

*2 $\times \frac{3}{4}$ and $\frac{5}{8}$ *$1\frac{1}{2} \times \frac{3}{4}$ to $\frac{5}{16}$

*$1\frac{3}{4} \times \frac{3}{4}$ and $\frac{5}{8}$ *$1\frac{1}{8} \times \frac{1}{2}$ to $\frac{5}{16}$ *$1\frac{3}{8} \times \frac{5}{8}$ to $\frac{3}{8}$

*$1\frac{5}{8} \times \frac{3}{4}$ to $\frac{1}{2}$ *$1\frac{1}{4} \times \frac{5}{8}$ to $\frac{5}{16}$

Also Round Edge 5 overall $\times$ $1\frac{1}{8}$ thick

BEVELS OR FIRE BARS

$4\frac{5}{8} \times \frac{3}{4}$ to $\frac{3}{8}$ $2\frac{17}{32} \times \frac{1}{2}$ to $\frac{1}{4}$

$4\frac{1}{2} \times \frac{3}{4}$ to $\frac{3}{8}$ $2\frac{9}{32} \times \frac{3}{8}$ to $\frac{1}{8}$

4×1 to $\frac{3}{8}$ We also roll $2\frac{1}{4} \times \frac{1}{2}$ to $\frac{1}{4}$

*$4 \times \frac{5}{8}$ to $\frac{1}{4}$ these sizes $2 \times \frac{25}{32}$ to $\frac{1}{2}$

                  thicker with

$3\frac{5}{8} \times \frac{5}{8}$ to $\frac{5}{16}$ same bevel   *$2 \times \frac{3}{8}$ to $\frac{1}{8}$

*$3 \times \frac{3}{4}$ to $\frac{3}{8}$ $1\frac{1}{2} \times \frac{3}{8}$ to $\frac{1}{4}$

$2\frac{5}{8} \times \frac{5}{8}$ to $\frac{3}{8}$ $\frac{3}{4} \times \frac{3}{16}$ to $\frac{1}{16}$

$4\frac{1}{4} \times \frac{3}{4}$ to $\frac{5}{16}$ parallel for $1\frac{3}{4}$

ROUND EDGE BEVEL

Full Size

CONVEX SQUARE & FEATHER EDGE

4⅜ × ½ × ¼		1¾ × ¾ × ⅜
4 × ⅜ × ¼		1¾ × ⅝ × ⁵⁄₁₆
4 × 1 × ¾		1½ × ¾ × ⅜
4 × ¾ × ⅜		1½ × ⅝ × ⁵⁄₁₆
3½ × ½ × ¼		*1½ × ½ × ¼ & ⅛
3 × ⁵⁄₁₆ × ⅛		1⅜ × ¾ × ⅜
*2½ × ⅝ × ⅜ & ⁵⁄₁₆		1⅜ × ⅝ × ⁵⁄₁₆
2½ × ⁷⁄₁₆ × ⅛		1⅜ × ½ × ¼
2½ × ⁵⁄₁₆ × ⅛		*1¼ × ⅝ × ¼
*2¼ × ¾ × ⅜		*1¼ × ½ × ¼
2 × ¾ × ⅜		1¼ × ⅜ × ³⁄₁₆
2 × ⅝ × ⁵⁄₁₆		*1⅛ × ½ × ¼
*2 × ½ × ¼ & ³⁄₃₂		1 × ½ × ¼
		⅞ × ⅜ × ³⁄₁₆

4½ × ½		1¼ × ½
2¼ × ⅜		*1¼ × ⅜
1¾ × ⁵⁄₁₆	⅞ × ⁷⁄₃₂	*1¼ × ¼
1⅝ × ⁹⁄₁₆	for toy tyres	1⅛ × ⅜
1½ × ½		1⅛ × ¼
*1½ × ⅜		1 × ⅜
1½ × ⁵⁄₁₆		1 × ¼
		⅞ × ¼

* Indicates sections usually stocked

14

CHANNELS, Full Size

Approximate weight per foot below each section

$1 \times {}^{7}/_{16} \times {}^{3}/_{16}$ $*1{}^{1}/_{8} \times {}^{1}/_{2} \times {}^{7}/_{32}$

.9 lb. (32)   1.06 lbs. (33)

$1{}^{1}/_{4} \times {}^{1}/_{2} \times {}^{3}/_{16}$
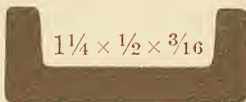
1.2 lbs. (34)

$*1{}^{1}/_{2} \times {}^{5}/_{8} \times {}^{3}/_{16}$
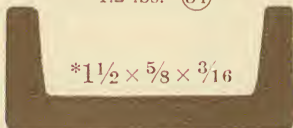
1.5 lbs. (35)

RAILWAY INTERLOCKING CHANNEL AND FISH PLATE

3.2 lbs.
$*1{}^{5}/_{8} \times 1{}^{1}/_{4} \times {}^{5}/_{16}$
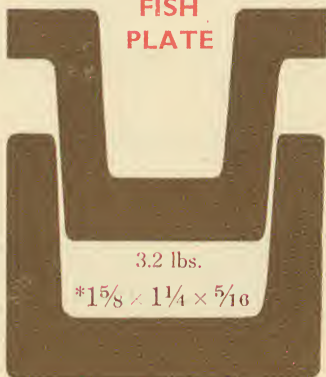
3.4 lbs. (36)

SPECIAL CHANNELS, Full Size

Approximate weight
per foot below
each section

* 2 × 1 × ¼

3 lbs. �37

* 2½ × 1 × ⁵⁄₁₆

4.14 lbs. �38

* 3 × ¾ × ³⁄₁₆

2.7 lbs. �39

3¾ × 1 × ⅝
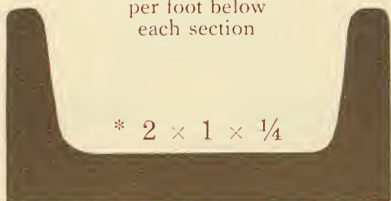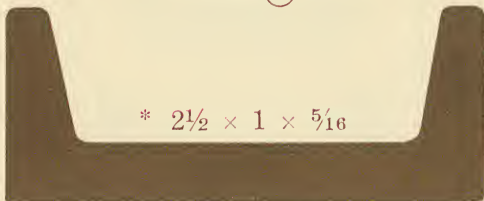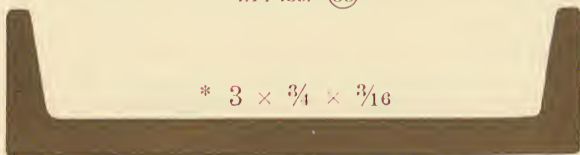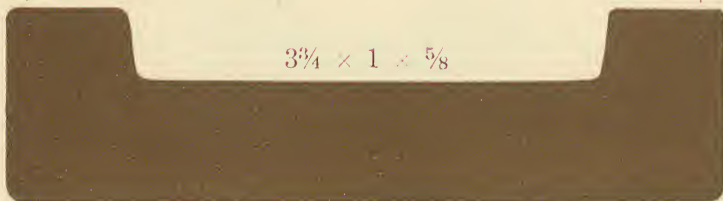
9.6 lbs.

* Indicates sections usually stocked

WINDOW SECTIONS, Full Size

Approximate weight
per foot below
each section
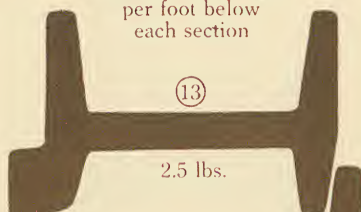
⑬

2.5 lbs.

⑦

2 lbs.

⑧

2 lbs.

* ⑤
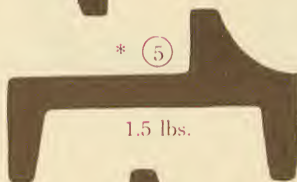
1.5 lbs.

④ *

1.4 lbs.

WINDOW SECTIONS, Full Size

Approximate weight
per foot below
each section

* (16)

2 lbs.

* (15)

1.7 lbs.

* (14)

1.7 lbs.

* (10)

.5 lb.

* Indicates sections usually stocked

WINDOW SECTIONS, Full Size

Approximate weight per foot below each section

(25)

1.5 lbs.

(26)

1.5 lbs.

(24)

1.6 lbs.

(29)

* 1.7 lbs.

SPECIAL SECTI[...]

Approximate weight per [...]

* ANTI CLIMB[...]

$7\frac{1}{2}$ in. FA[...]

CHANNEL

ONS, Full Size

oot below each section

ER $6 \times {}^{15}\!/_{16}$

8 lbs.

UCET
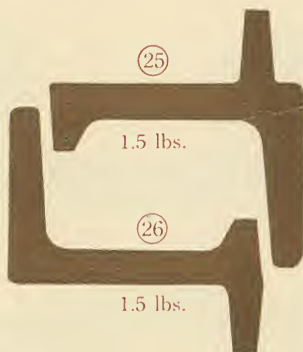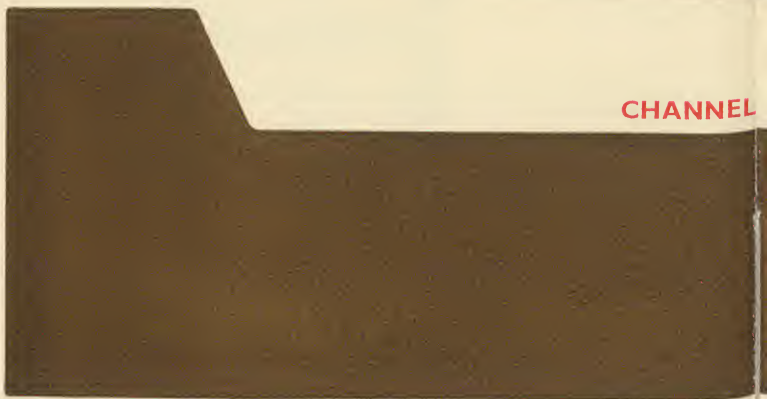
17 lbs.

$7^3\!/_4 \times 2$
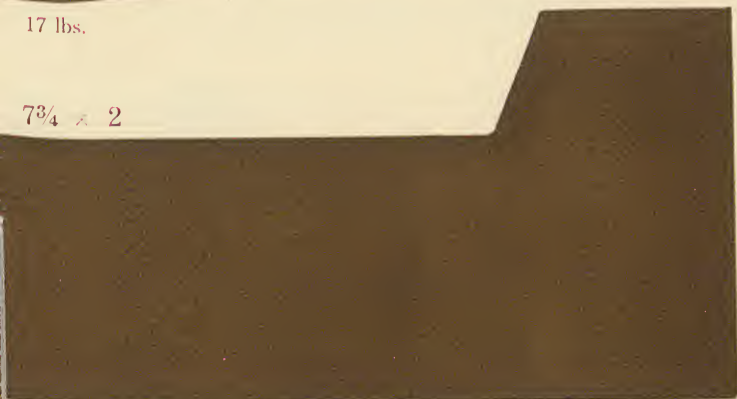
40.8 lbs.

SPECIAL SECTIONS

VEHICLE TYRE CHANNELS

* $\frac{1}{8}$ thick $\frac{7}{16}$

$\leftarrow$------------- 1 ------------$\rightarrow$
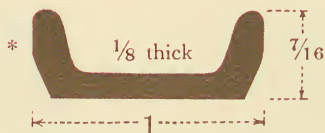
and other sizes as below

*$1\frac{3}{4}$ $\times$ $\frac{3}{4}$ $\times$ $\frac{1}{4}$ *$1\frac{3}{8}$ $\times$ $\frac{5}{8}$ $\times$ $\frac{3}{16}$

*$1\frac{5}{8}$ $\times$ $\frac{21}{32}$ $\times$ $\frac{3}{16}$ *$1\frac{1}{4}$ $\times$ $\frac{1}{2}$ $\times$ $\frac{1}{8}$

*$1\frac{1}{2}$ $\times$ $\frac{5}{8}$ $\times$ $\frac{3}{16}$ *$1\frac{1}{8}$ $\times$ $\frac{1}{2}$ $\times$ $\frac{1}{8}$

MOTOR SPRING CLIP SECTIONS

*1 $\times$ $\frac{1}{4}$ *$\frac{3}{4}$ $\times$ $\frac{1}{8}$ *$\frac{7}{8}$ $\times$ $\frac{1}{4}$

*1 $\times$ $\frac{3}{16}$ *$\frac{3}{4}$ $\times$ $\frac{3}{16}$

HALF ROUNDS

.5 $\leftarrow$------.7------$\rightarrow$ $\frac{7}{16}$ $\leftarrow$-----$\frac{5}{8}$-----$\rightarrow$

.91 lbs. (61)   .72 lbs. (62)

$3\frac{1}{2}$ $\times$ $1\frac{3}{4}$ *1 $\times$ $\frac{1}{2}$
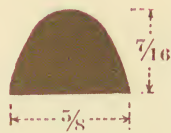
3 $\times$ $1\frac{1}{2}$ $\frac{7}{8}$ $\times$ $\frac{7}{16}$

$1\frac{3}{8}$ $\times$ $\frac{11}{16}$ *$\frac{3}{4}$ $\times$ $\frac{3}{8}$

$1\frac{1}{4}$ $\times$ $\frac{5}{8}$ $\frac{5}{8}$ $\times$ $\frac{5}{16}$

$1\frac{1}{8}$ $\times$ $\frac{9}{16}$ $\frac{1}{2}$ $\times$ $\frac{1}{4}$

SPECIAL SECTIONS, Full Size

Approximate weight per foot below each section

MULLION BAR

2.9 lbs.

DOUBLE BEVEL

1.2 lbs.

COPE BAR

9.5 lbs.

RAILWAY TYRE RETAINING RINGS
Full Size

Approximate weight per foot below each section

$1\frac{1}{4}$

Queensland Rlys.
1.8 lbs.

$1\frac{1}{8}$

N.S.W. Rlys.
1.7 lbs.

$1\frac{1}{8}$

1.94 lbs.
(6748)

$1\frac{3}{16}$

1.6 lbs.
(7761)

1.4 lbs.
(40.6)

.53 lbs.
(40.5)

SPECIAL SECTIONS, Full Size

Approximate weight per foot below each section

JOIST SECTIONS

$2 \times \frac{7}{8}$

3.4 lbs.

$1\frac{1}{2} \times \frac{3}{4}$

1.4 lbs.

$1\frac{1}{4} \times \frac{1}{2}$

1.35 lbs.
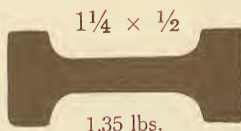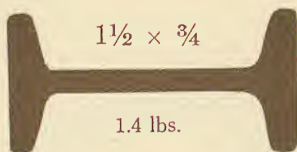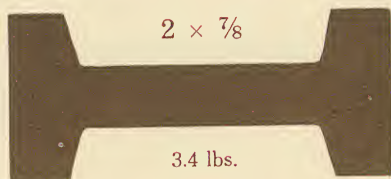
TRAMWAY GRIP DIE

STAR FENCE SECTION

1.5 lbs.

4.82 lbs.

BUMPER BARS, Full Size

Approximate weight per foot below each section

" D " SECTION
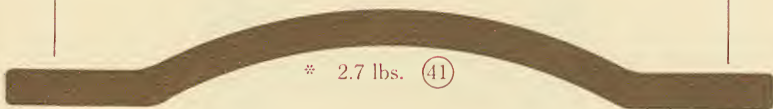
❋   2.7 lbs. (41)

4in. DOUBLE RECESS
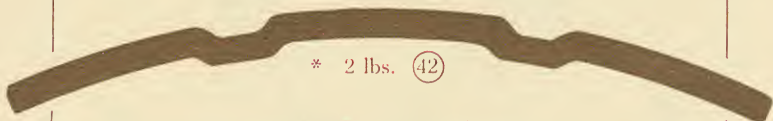
❋   2 lbs. (42)

CONCAVE CONVEX
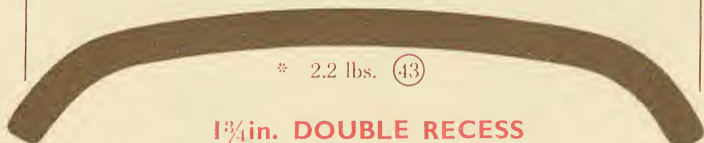
❋   2.2 lbs. (43)

1¾in. DOUBLE RECESS

❋   1.37 lbs. (44)

CONVEX

*3 × ⁵⁄₁₆ (45)	*1¾ × ⁵⁄₁₆ (49)
*2½ × ⁵⁄₁₆ (46) *2 × ⁵⁄₁₆ (48)	*1¾ × ¼ (50)
*2¼ × ⁵⁄₁₆ (47)	*1½ × ¼ (51)

Flat Bumper Bars, any size, round or square edge

SPECIAL SECTIONS

OVAL AND HARROW TYNE SECTIONS

* $1\frac{3}{4}$ × $1\frac{5}{16}$ * $1\frac{1}{16}$ × $\frac{3}{4}$

* $1\frac{1}{2}$ × $1\frac{3}{16}$ 1 × $\frac{1}{2}$

* $1\frac{3}{8}$ × $1\frac{1}{16}$ * $\frac{29}{32}$ × $\frac{11}{16}$

   $1\frac{1}{4}$ × $\frac{5}{8}$ * $2\frac{1}{32}$ × $\frac{7}{16}$ $\frac{7}{8}$ × $\frac{7}{16}$

* $1\frac{3}{16}$ × $\frac{15}{16}$ * $\frac{25}{32}$ × $\frac{9}{16}$

DIAMONDS

$1\frac{7}{16}$ × $1\frac{1}{16}$ * $1\frac{1}{8}$ × $\frac{25}{32}$

$1\frac{9}{32}$ × $\frac{29}{32}$ * $\frac{7}{8}$ × $\frac{5}{8}$ * 1 × $\frac{11}{16}$

MILK CAN SECTIONS
Full Size
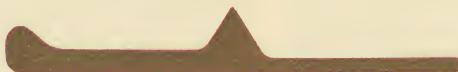
     *   1.06 lbs. per foot   (52)
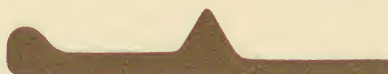
     *   .97 lb. per foot   (53)

* Indicates sections usually stocked

SPECIAL SECTIONS, Full Size

Approximate weight per foot below each section

SHOE HEEL SECTION

.25 lb.

BUCKET HANDLE SECTIONS

*

.28 lb. (54)

*

.33 lb. (55)

*

.4 lb. (56)

BEVEL SECTION

GRIPPER

.6 lb.

1.4 lbs.

LOCK SECTIONS

2.1 lbs.

2 lbs.

BULB FLAT

4 lbs.

* Indicates sections usually stocked

SPECIAL SECTIONS, Full Size

Approximate weight per foot below each section

CHECK RAIL
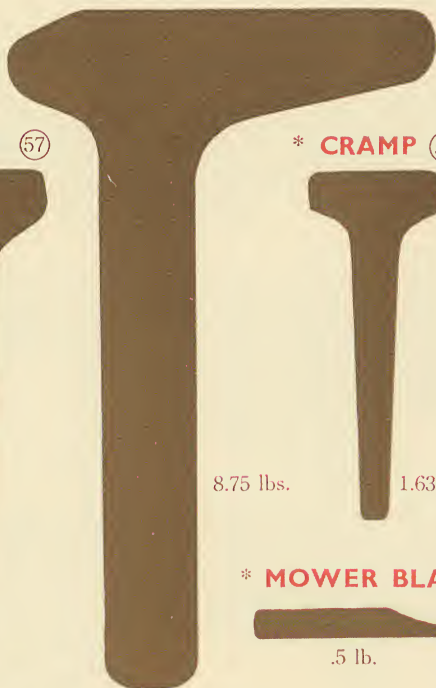
* CRAMP ⑤⑦

* CRAMP ⑤⑧

8.75 lbs.

1.63 lbs.

* MOWER BLADE

.5 lb.

3.2 lbs.

BEVEL EDGE FLATS

* 1.05 lbs.
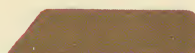
* .75lb.

BEATER BARS

1.5 lbs.
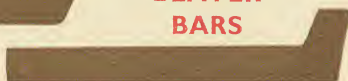
1.25 lbs.

RAIL CLIP SECTIONS, Full Size

Approximate weight per foot below each section

$2\frac{1}{2}$

$\frac{7}{8}$

$\frac{1}{2}$

$\frac{1}{8}$

$\frac{1}{2}$

$\frac{1}{4}$

6.2 lbs.

$2\frac{7}{8}$

$\frac{3}{4}$

$\frac{5}{16}$

$\frac{3}{8}$

$\frac{7}{8}$

$\frac{1}{16}$

6.6 lbs.

$3\frac{1}{8}$

$\frac{3}{4}$

$\frac{3}{8}$

$\frac{5}{16}$

$1\frac{1}{8}$

$\frac{1}{16}$

6 lbs.

$2\frac{13}{16}$

$\frac{15}{16}$

$\frac{9}{16}$

$\frac{9}{32}$

$\frac{9}{16}$

$\frac{3}{32}$

8 lbs.
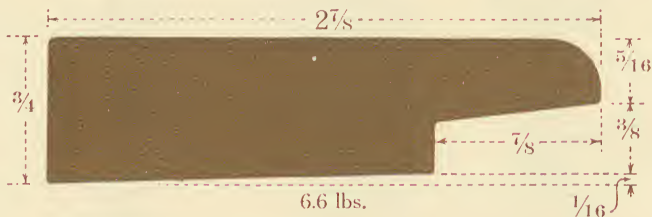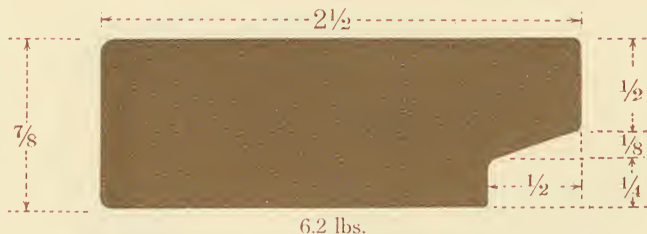
SPECIAL SECTIONS, Full Size

Approximate weight per foot below each section

S.E.C. RAIL CLIP SECTION

$3\frac{7}{16}$

$\frac{3}{8}$

$\frac{1}{4}$

$\frac{1}{4}$

$1\frac{7}{32}$

9.1 lbs.

$1\frac{9}{32}$

COPING ANGLE

4.06 lbs.

2

$2\frac{1}{2}$

$\frac{1}{4}$

SPIRAL SPRING SECTION

$\frac{7}{16}$ rad.

$1\frac{9}{16}$

$\frac{3}{8}$ rad.
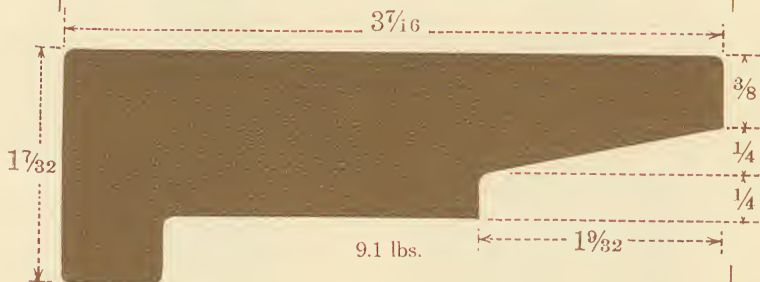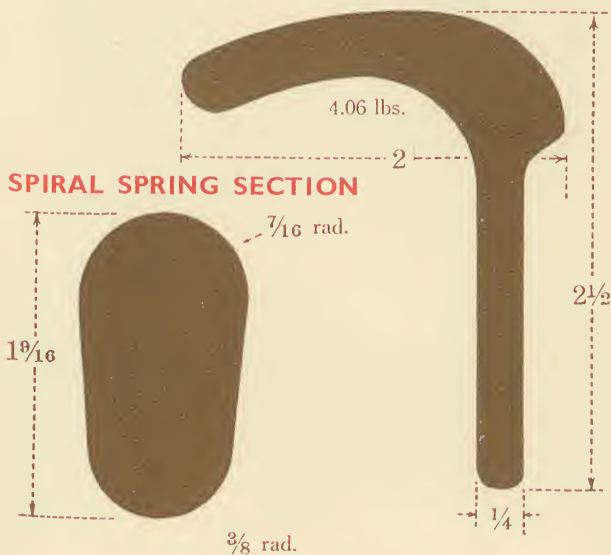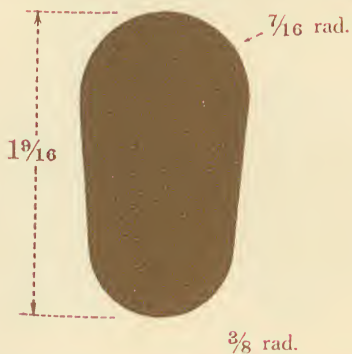
SPIRAL SPRING SECTIONS, Full Size

.275 $1\frac{3}{32}$ .348

365   $\frac{3}{8}$ .320

.20 $1\frac{1}{32}$ .297

$1\frac{1}{2}$

$1\frac{3}{16}$

$1\frac{3}{4}$ $1\frac{1}{2}$

$\frac{1}{8}$
Rad. $1\frac{3}{16}$ $1\frac{1}{16}$

$\frac{7}{8}$ $1\frac{1}{16}$ $\frac{5}{8}$

$1\frac{1}{4}$ $1\frac{1}{4}$ $1\frac{3}{16}$

$\frac{3}{4}$ $\frac{9}{16}$ $\frac{1}{2}$
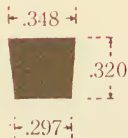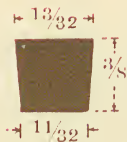
PLOW BEAM SECTIONS, Full Size

Approximate weight per foot below each section

* $2\frac{1}{2}$ × $1\frac{5}{8}$

8.37 lbs.   (59)

* $2\frac{3}{4}$ × 2

12 lbs.   (60)

4 × $1\frac{1}{4}$

10.4 lbs.
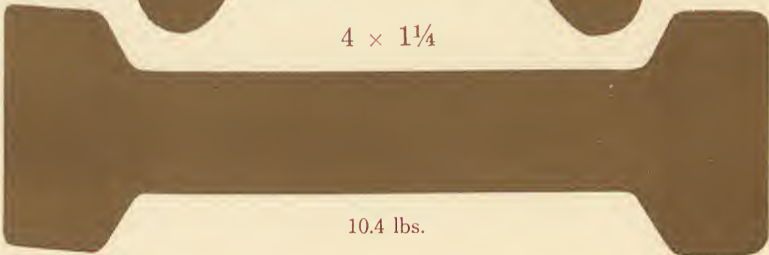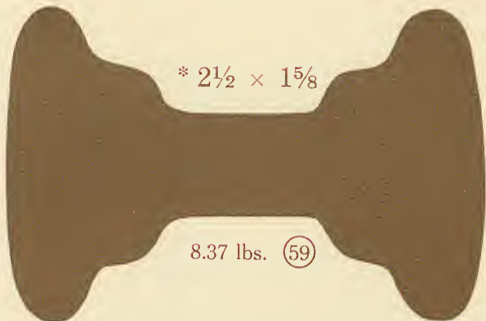
FISHPLATE SECTIONS, Half Full Size

80lb. S.E.C. RAIL FISHPLATE

$13\frac{?}{16}$

$3\ {}^{25}\!/_{64}$

83lb. N.S.W. RAIL FISHPLATE

1

$4\ {}^{5}\!/_{16}$
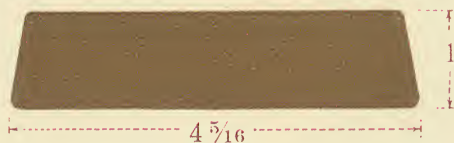
100lb. RAIL FISHPLATE

1

$4\ {}^{13}\!/_{64}$
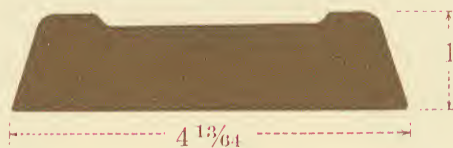
100lb. N.S.W. RAIL FISHPLATE

1

4

FISHPLATE SECTIONS, Half Full Size

MT. LYELL CO. FISHPLATE

$3/4$

$2\ 23/32$
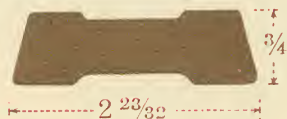
CROSSING FISHPLATE for 60lb. A.S. RAIL

$13/16$

$3\ 3/16$

80lb. RAIL FISHPLATE

$7/8$

$3\ 43/64$

POINT FISHPLATE for 60lb. A.S. RAIL

$1\ 1/32$

$3\ 3/16$

80lb. N.S.W. T. RAIL FISHPLATE

1

$3\ 1/2$
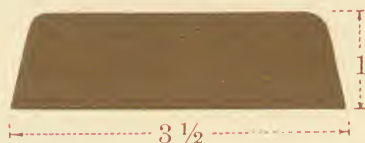
SPECIAL SECT

Approximate weight pe

DOUBLE-HEADED
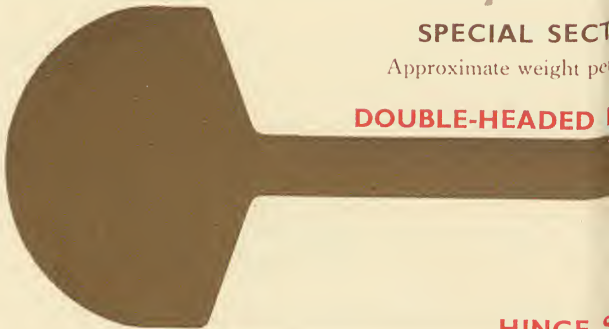
HINGE S

6.5 lbs.

RIBBED

5.6 lbs.   * **GRADER**

¾ thick   6.6 lbs.

4½ in. PL

4.7 lbs.

ONS, Full Size
foot below each section

AIL $6 \frac{5}{16} \times 1\frac{5}{8}$

15.3 lbs.

SECTIONS

5.1 lbs.

OMB BAR

BLADES

$\frac{1}{2}$ thick   9.1 lbs.

W SHARE

TELEPHONES:
STH. MELBOURNE M 2231   BROOKLYN, FY7 946

TELEGRAMS AND CABLES: "STEELMILL," MELBOURNE

NOTICE

In the following tables and in all weights of sections given in this book, the weight of the section in STEEL is given, but the weight in IRON can be obtained by making a deduction of two per cent.

GOVERNMENT
CONTRACTORS

GALVANIZED SHEETS— CORRUGATED

Approximate number of sheets to a case (ordinary Corruga-
tions) weighing about 10 cwt.

Length		Gauges					
		18	20	22	24	26	28
5 feet	..	42	53	66	83	118	132
6 feet	..	35	44	55	69	98	111
7 feet	..	30	38	47	59	84	95
8 feet	..	26	33	41	51	73	83
9 feet	..	23	29	36	45	65	74
10 feet	..	21	26	33	41	58	66
11 feet	..	19	24	30	38	54	62
12 feet	..	17	22	28	35	49	56

NOTE.—2 cwt. bundles contain approximately one-fifth
of the above number of sheets.

Approximate weight per sheet in lbs. (based on above
table to nearest $\frac{1}{4}$-lb.).

Gauge	5 ft.	6 ft.	7 ft.	8 ft.	9 ft.	10 ft.	11 ft.	12 ft.
18	$26\frac{1}{2}$	32	$37\frac{1}{4}$	43	49	53	$58\frac{1}{2}$	64 lbs.
20	21	$25\frac{1}{2}$	$29\frac{1}{2}$	34	$38\frac{1}{2}$	43	$46\frac{1}{2}$	51 lbs.
22	17	$20\frac{1}{4}$	24	$27\frac{1}{4}$	31	34	$37\frac{1}{4}$	$40\frac{1}{4}$ lbs.
24	$13\frac{1}{2}$	$16\frac{1}{4}$	19	22	25	$27\frac{1}{4}$	$29\frac{3}{4}$	$32\frac{1}{2}$ lbs.
26	$9\frac{1}{2}$	$11\frac{1}{2}$	$13\frac{1}{2}$	$15\frac{1}{2}$	$17\frac{1}{4}$	$19\frac{1}{4}$	$20\frac{3}{4}$	23 lbs.
28	$8\frac{1}{2}$	10	$11\frac{3}{4}$	$13\frac{1}{2}$	$15\frac{1}{4}$	17	$18\frac{1}{4}$	20 lbs.

COVERING CAPACITY OF GALVANIZED CORRUGATED SHEETS.

One Ton of Galvanised Corrugated Sheets has the following
approximate covering capacity :—

	24 g. 3 in. Cor.	26 g. 3 in. Cor.	26 g. 1 in. Cor.	28 g. 1 in. Cor.
Single Lap	1,600 sq. ft.	2,200 sq. ft.	2,327 sq. ft.	2,645 sq. ft.
Lap and half	—	2,000 sq. ft.	—	—
Double Lap	1,400 sq. ft.	1,900 sq. ft.	2,230 sq. ft.	2,535 sq. ft.

NOTE.—To ascertain the number of squares (10 ft. × 10 ft.)'
divide by 100.

To ascertain cost per square, divide price per ton
by number of squares.

MELBOURNE IRON & STEEL MILLS PTY. LTD.

WEIGHT OF ANGLE AND TEE STEEL
In Lbs. per Lineal Foot

Thickness in Fractions of an Inch

3/4	11/16	5/8	9/16	1/2	7/16	3/8	5/16	1/4	3/16	1/8	Flanges added
										·80	2
								1·91	1·47	·87	2½
							2·85	2·33	1·79		3
							3·39	2·77	2·11		3½
						4·62	3·92	3·19	2·43		4
					6·05	5·26	4·45	3·61	2·75		4½
				7·65	6·78	5·89	4·98	4·04			5
			9·44	8·50	7·53	6·53	5·51	4·46			5½
		11·43	10·41	9·36	8·28	7·18	6·05	4·90			6
		12·49	11·36	10·20	9·02	7·81	6·58				6½
	14·76	13·55	12·31	11·05	9·76	8·45	7·11				7
	15·92	14·61	13·27	11·90	10·50	9·08	7·64				7½
18·49	17·09	15·67	14·22	12·75	11·25	9·72	8·17				8
19·77	18·27	16·74	15·19	13·61	12·01	10·37					8½
21·04	19·44	17·80	16·14	14·46	12·74	11·00					9
22·32	20·61	18·87	17·10	15·31	13·49	11·64					9½
23·59	21·77	19·92	18·05	16·15	14·23	12·27					10
24·86	22·94	20·98	19·01	17·00	14·97						10½
26·13	24·10	22·04	19·95	17·84	15·70						11
28·70	26·45	24·18	21·89	19·56	17·21						12

ROUND AND SQUARE STEEL BARS

Dia. or side in inches	Weight per lineal foot ●	Weight per lineal foot ■	Area of ●
¼	·167	·213	·049
5/16	·261	·332	·077
⅜	·376	·478	·110
7/16	·511	·651	·150
½	·668	·849	·196
9/16	·845	1·076	·249
⅝	1·043	1·328	·307
11/16	1·262	1·607	·371
¾	1·502	1·912	·442
13/16	1·763	2·245	·518
⅞	2·044	2·603	·601
15/16	2·347	2·988	·690
1	2·670	3·400	·785
1⅛	3·380	4·303	·994
1¼	4·172	5·312	1·227
1⅜	5·049	6·428	1·485
1½	6·008	7·650	1·767
1⅝	7·051	8·987	2·074
1¾	8·178	10·412	2·405
1⅞	9·388	11·953	2·761
2	10·681	13·600	3·142
2⅛	12·06	15·35	3·55
2¼	13·52	17·21	3·98
2⅜	15·06	19·18	4·43
2½	16·69	21·25	4·91
2⅝	18·40	23·43	5·41
2¾	20·19	25·71	5·94
2⅞	22·07	28·10	6·49
3	24·03	30·60	7·07
3¼	28·21	35·91	8·30
3½	32·71	41·65	9·62
3¾	37·55	47·81	11·05
4	42·73	54·40	12·57
4¼	48·23	61·41	14·19
4½	54·07	68·85	15·90
4¾	60·25	76·71	17·72
5	66·76	85·00	19·64
5¼	73·60	93·71	21·65
5½	80·78	102·85	23·76
5¾	88·29	112·41	25·97
6	96·13	122·40	28·27

WEIGHT OF FLAT ROLLED STEEL
IN LBS. PER LINEAL FOOT

Width in inches	Thickness in Inches							
	$\frac{1}{16}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$
$\frac{5}{8}$	·133	·266	·399	·531	·664	·798	·931	1·064
$\frac{3}{4}$	·159	·319	·478	·638	·797	·957	1·117	1·277
$\frac{7}{8}$	·186	·372	·558	·744	·950	1·117	1·303	1·489
1	·213	·425	·638	·850	1·06	1·28	1·49	1·70
$1\frac{1}{8}$	·240	·478	·718	·956	1·19	1·44	1·68	1·91
$1\frac{1}{4}$	·266	·531	·797	1·06	1·33	1·59	1·86	2·13
$1\frac{3}{8}$	·293	·584	·877	1·17	1·46	1·76	2·05	2·34
$1\frac{1}{2}$	·319	·638	·956	1·28	1·59	1·91	2·23	2·55
$1\frac{5}{8}$	·346	·691	1·037	1·38	1·72	2·07	2·42	2·76
$1\frac{3}{4}$	·372	·744	1·12	1·49	1·86	2·23	2·60	2·98
$1\frac{7}{8}$	·399	·797	1·20	1·59	1·99	2·39	2·79	3·19
2	·425	·850	1·28	1·70	2·13	2·55	2·98	3·40
$2\frac{1}{8}$	·453	·903	1·36	1·81	2·26	2·71	3·17	3·61
$2\frac{1}{4}$	·478	·956	1·43	1·91	2·39	2·87	3·35	3·83
$2\frac{3}{8}$	·506	1·01	1·52	2·02	2·52	3·03	3·54	4·04
$2\frac{1}{2}$	·531	1·06	1·59	2·13	2·66	3·19	3·72	4·25
$2\frac{5}{8}$	·559	1·12	1·67	2·23	2·78	3·36	3·91	4·46
$2\frac{3}{4}$	·584	1·17	1·75	2·34	2·92	3·51	4·09	4·68
$2\frac{7}{8}$	·612	1·22	1·83	2·44	3·05	3·67	4·28	4·89
3	·638	1·28	1·91	2·55	3·19	3·83	4·46	5·10
$3\frac{1}{8}$	·666	1·33	1·99	2·66	3·32	3·99	4·65	5·31
$3\frac{1}{4}$	·691	1·38	2·07	2·76	3·45	4·14	4·83	5·53
$3\frac{1}{2}$	·744	1·49	2·23	2·98	3·72	4·46	5·21	5·95
$3\frac{5}{8}$	·772	1·54	2·31	3·08	3·85	4·63	5·40	6·16
4	·850	1·70	2·55	3·40	4·25	5·10	5·95	6·80
$4\frac{1}{2}$	·956	1·91	2·87	3·83	4·78	5·74	6·69	7·65
5	1·06	2·13	3·19	4·25	5·31	6·38	7·44	8·50
$5\frac{1}{2}$	1·17	2·34	3·51	4·68	5·84	7·01	8·18	9·35
6	1·28	2·55	3·83	5·10	6·38	7·65	8·93	10·20

WEIGHT OF FLAT ROLLED STEEL
IN LBS. PER LINEAL FOOT

Thickness in Inches								Width in Inches
$\frac{9}{16}$	$\frac{5}{8}$	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{13}{16}$	$\frac{7}{8}$	$\frac{15}{16}$	1	
1·197	1·330	1·465	1·596	1·729	1·863	1·996	2·129	$\frac{5}{8}$
1·436	1·596	1·756	1·916	2·075	2·235	2·395	2·554	$\frac{3}{4}$
1·676	1·862	2·048	2·235	2·421	2·609	2·794	2·980	$\frac{7}{8}$
1·91	2·13	2·34	2·55	2·76	2·98	3·19	3·40	1
2·15	2·40	2·63	2·87	3·11	3·35	3·59	3·83	$1\frac{1}{8}$
2·39	2·66	2·92	3·19	3·45	3·72	3·98	4·25	$1\frac{1}{4}$
2·63	2·93	3·22	3·51	3·80	4·10	4·39	4·68	$1\frac{3}{8}$
2·87	3·19	3·51	3·83	4·14	4·46	4·78	5·10	$1\frac{1}{2}$
3·11	3·46	3·80	4·14	4·49	4·84	5·18	5·53	$1\frac{5}{8}$
3·35	3·72	4·09	4·46	4·83	5·21	5·58	5·95	$1\frac{3}{4}$
3·59	3·99	4·39	4·78	5·18	5·58	5·98	6·38	$1\frac{7}{8}$
3·83	4·25	4·68	5·10	5·53	5·95	6·38	6·80	2
4·06	4·52	4·97	5·42	5·87	6·33	6·78	7·23	$2\frac{1}{8}$
4·30	4·78	5·26	5·74	6·22	6·69	7·17	7·65	$2\frac{1}{4}$
4·54	5·05	5·56	6·06	6·56	7·07	7·58	8·08	$2\frac{3}{8}$
4·78	5·31	5·84	6·38	6·91	7·44	7·97	8·50	$2\frac{1}{2}$
5·02	5·58	6·14	6·69	7·25	7·81	8·37	8·93	$2\frac{5}{8}$
5·26	5·84	6·43	7·01	7·60	8·18	8·77	9·35	$2\frac{3}{4}$
5·50	6·12	6·73	7·33	7·94	8·55	9·17	9·78	$2\frac{7}{8}$
5·74	6·38	7·01	7·65	8·29	8·93	9·56	10·20	3
5·98	6·65	7·31	7·97	8·64	9·31	9·97	10·63	$3\frac{1}{8}$
6·22	6·91	7·60	8·29	8·98	9·67	10·36	11·05	$3\frac{1}{4}$
6·70	7·44	8·18	8·93	9·67	10·41	11·16	11·90	$3\frac{1}{2}$
6·94	7·71	8·48	9·25	10·02	10·79	11·56	12·33	$3\frac{5}{8}$
7·65	8·50	9·35	10·20	11·05	11·90	12·75	13·60	4
8·61	9·56	10·52	11·48	12·43	13·39	14·34	15·30	$4\frac{1}{2}$
9·56	10·63	11·69	12·75	13·81	14·88	15·94	17·00	5
10·52	11·69	12·86	14·03	15·19	16·36	17·53	18·70	$5\frac{1}{2}$
11·48	12·75	14·03	15·30	16·58	17·85	19·13	20·40	6

WIRE AND SHEET GAUGES

Thickness or Diameter in Inches

Gauge	Approx. thickness in inches	Birmingham Sheet *	Stubbs (Birmingham Wire)	Imperial Standard (British) Wire	American Standard Brown & Sharp
4/0	$\frac{1}{2}$	·542	·454	·400	·4600
3/0		·500	·425	·372	·4096
2/0		·445	·380	·348	·3648
0		·400	·340	·324	·3249
1		·353	·300	·300	·2893
2		·315	·284	·276	·2576
3		·280	·259	·252	·2294
4	$\frac{1}{4}$	·250	·238	·232	·2043
5		·222	·220	·212	·1819
6		·198	·203	·192	·1620
7		·176	·180	·176	·1443
8		·157	·165	·160	·1285
9		·140	·148	·144	·1144
10	$\frac{1}{8}$	·125	·134	·128	·1019
11	$\frac{7}{64}$	·111	·120	·116	·0907
12	$\frac{3}{32}$	·099	·109	·104	·0808
13		·088	·095	·092	·0720
14	$\frac{5}{64}$	·078	·083	·080	·0641
15		·070	·072	·072	·0571
16	$\frac{1}{16}$	·062	·065	·064	·0508
17		·056	·058	·056	·0453
18	$\frac{1}{20}$	·050	·049	·048	·0403
19		·044	·042	·040	·0359
20		·039	·035	·036	·0320
21		·035	·032	·032	·0285
22	$\frac{1}{32}$	·031	·028	·028	·0253
23		·028	·025	·024	·0226
24	$\frac{1}{40}$	·025	·022	·022	·0201
25		·022	·020	·020	·0179
26		·020	·018	·018	·0159
27		·017	·016	·0164	·0142
28	$\frac{1}{64}$	·016	·014	·0148	·0126
29		·014	·013	·0136	·0113
30	$\frac{1}{80}$	·012	·012	·0124	·0100
31		·011	·010	·0116	·00893
32		·0098	·009	·0108	·00795
33		·0087	·008	·0100	·00708
34	$\frac{1}{128}$	·0077	·007	·0092	·00630
35		·0069	·005	·0084	·00561
36		·0061	·004	·0076	·00509

*This Gauge (B.G.) is the customary commercial Gauge for Iron and Steel Sheets, whether Black, Galvanized or Tinned. It is sometimes erroneously referred to as the Birmingham Wire Gauge (B.W.G.), but the latter is a different gauge.

It is useful to remember that 10 B.G. is $\frac{1}{8}$ in., 16 B.G. is $\frac{1}{16}$ in., and that for every addition of 6 to the gauge number, the thickness is halved.

GALVANISED BARBED WIRE

IOWA PATTERN

Gauge	Approx. length per cwt. yards	Approx. weight per mile lb.	Approx. breaking load in lb.
12	460	429	1140
13	560	352	915
14	670	294	675

WAUKEGAN PATTERN

Gauge	Approx. length per cwt. yards	Approx. weight per mile lb.	Approx. breaking load in lb.
12½	620	318	1020
14	880	229	650
14*	930	212	650

*Waukegan long distance.

GENERAL NOTES AND INFORMATION

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1 square foot of steel, 1 inch thick, weighs 40·8 lbs.

Steel expands $\frac{1}{10000}$ of its length for every 13 degrees F. increase of temperature, or every ton per square inch of stress.

The melting points of various metals are about as follows :—

				Centigrade.
Brass	..	..	..	1040
Cast Iron	..	..	..	1200
Chromium	..	..	..	1620
Copper	..	..	..	1080
Gold	..	..	..	1060
Lead	..	..	..	330
Manganese	..	..	..	1230
Mild Steel	..	..	..	1350
Molybdenum	..	..	..	2550
Nickel	..	..	..	1450
Silicon	..	..	..	1420
Silver	..	..	..	960
Solder	..	..	..	160
Tin	..	..	..	230
Titanium	..	..	..	1800
Tungsten	..	..	..	3400
Vanadium	..	..	..	1720
Wrought Iron	..	..	..	1530
Zinc	..	..	..	420

MELBOURNE IRON & STEEL MILLS PTY. LTD.

WHITWORTH STANDARD BOLTS AND NUTS

Dimensions are given to the nearest one sixty-fourth of an inch

Diameter of Bolt	Bolt Head and Nuts						Threads per inch	Diameter of Tapping Hole	
	Width across Flats		Width across Corners		Height of Bolt Head				
in.	in.	in	in.	in.	in.	in.		in.	in.
$\frac{3}{16}$	$\frac{7}{16}$		$\frac{1}{2}$ and $\frac{1}{64}$		$\frac{1}{8}$ and $\frac{1}{32}$		24	$\frac{1}{8}$ and $\frac{1}{64}$	
$\frac{1}{4}$	$\frac{1}{2}$ and $\frac{1}{64}$		$\frac{9}{16}$,, $\frac{1}{64}$		$\frac{3}{16}$,, $\frac{1}{32}$		20	$\frac{3}{16}$	
$\frac{5}{16}$	$\frac{9}{16}$,, $\frac{3}{64}$		$\frac{11}{16}$		$\frac{1}{4}$,, $\frac{1}{64}$		18	$\frac{1}{4}$	
$\frac{3}{8}$	$\frac{11}{16}$,, $\frac{1}{64}$		$\frac{13}{16}$		$\frac{5}{16}$,, $\frac{1}{64}$		16	$\frac{1}{4}$,, $\frac{3}{64}$	
$\frac{7}{16}$	$\frac{13}{16}$,, $\frac{1}{64}$		$\frac{15}{16}$,, $\frac{1}{64}$		$\frac{3}{8}$		14	$\frac{5}{16}$,, $\frac{3}{64}$	
$\frac{1}{2}$	$\frac{7}{8}$,, $\frac{1}{32}$		$1\frac{1}{16}$		$\frac{7}{16}$		12	$\frac{3}{8}$,, $\frac{1}{32}$	
$\frac{9}{16}$	1 ,, $\frac{1}{64}$		$1\frac{1}{8}$,, $\frac{1}{32}$		$\frac{7}{16}$,, $\frac{3}{64}$		12	$\frac{7}{16}$,, $\frac{1}{32}$	
$\frac{5}{8}$	1 ,, $\frac{3}{32}$		$1\frac{1}{4}$,, $\frac{1}{64}$		$\frac{1}{2}$,, $\frac{3}{64}$		11	$\frac{1}{2}$,, $\frac{1}{64}$	
$\frac{11}{16}$	$1\frac{3}{16}$,, $\frac{1}{64}$		$1\frac{3}{8}$,, $\frac{1}{64}$		$\frac{9}{16}$,, $\frac{1}{32}$		11	$\frac{9}{16}$,, $\frac{1}{64}$	
$\frac{3}{4}$	$1\frac{1}{4}$,, $\frac{3}{64}$		$1\frac{1}{2}$		$\frac{5}{8}$,, $\frac{1}{32}$		10	$\frac{5}{8}$	
$\frac{13}{16}$	$1\frac{3}{8}$,, $\frac{1}{64}$		$1\frac{9}{16}$,, $\frac{1}{32}$		$\frac{11}{16}$,, $\frac{1}{64}$		10	$\frac{11}{16}$	
$\frac{7}{8}$	$1\frac{7}{16}$,, $\frac{3}{64}$		$1\frac{11}{16}$,, $\frac{1}{64}$		$\frac{3}{4}$,, $\frac{1}{64}$		9	$\frac{11}{16}$,, $\frac{3}{64}$	
$\frac{15}{16}$	$1\frac{9}{16}$,, $\frac{1}{64}$		$1\frac{13}{16}$,, $\frac{1}{64}$		$\frac{13}{16}$		9	$\frac{3}{4}$,, $\frac{3}{64}$	
1	$1\frac{5}{8}$,, $\frac{3}{64}$		$1\frac{15}{16}$,, $\frac{1}{64}$		$\frac{7}{8}$		8	$\frac{13}{16}$,, $\frac{1}{32}$	
$1\frac{1}{8}$	$1\frac{13}{16}$,, $\frac{3}{64}$		$2\frac{1}{8}$,, $\frac{1}{32}$		$\frac{15}{16}$,, $\frac{3}{64}$		7	$\frac{15}{16}$,, $\frac{1}{64}$	
$1\frac{1}{4}$	2 ,, $\frac{3}{64}$		$2\frac{5}{16}$,, $\frac{3}{64}$		$1\frac{1}{16}$,, $\frac{1}{32}$		7	$1\frac{1}{16}$	
$1\frac{3}{8}$	$2\frac{3}{16}$,, $\frac{1}{32}$		$2\frac{1}{2}$,, $\frac{3}{64}$		$1\frac{3}{16}$,, $\frac{1}{64}$		6	$1\frac{1}{8}$,, $\frac{3}{64}$	
$1\frac{1}{2}$	$2\frac{3}{8}$,, $\frac{1}{64}$		$2\frac{3}{4}$,, $\frac{1}{32}$		$1\frac{5}{16}$		6	$1\frac{1}{4}$,, $\frac{3}{64}$	
$1\frac{5}{8}$	$2\frac{9}{16}$,, $\frac{1}{64}$		$2\frac{15}{16}$,, $\frac{1}{32}$		$1\frac{3}{8}$,, $\frac{3}{64}$		5	$1\frac{3}{8}$	
$1\frac{3}{4}$	$2\frac{3}{4}$		$3\frac{3}{16}$		$1\frac{1}{2}$,, $\frac{1}{32}$		5	$1\frac{1}{2}$	
$1\frac{7}{8}$	$3^{1}/_{64}$		$3\frac{7}{16}$,, $\frac{3}{64}$		$1\frac{5}{8}$,, $\frac{1}{64}$		$4\frac{1}{2}$	$1\frac{9}{16}$,, $\frac{1}{32}$	
2	$3\frac{1}{8}$,, $\frac{1}{32}$		$3\frac{5}{8}$		$1\frac{3}{4}$		$4\frac{1}{2}$	$1\frac{11}{16}$,, $\frac{1}{32}$	
$2\frac{1}{4}$	$3\frac{1}{2}$,, $\frac{3}{64}$		$4\frac{1}{16}$,, $\frac{1}{32}$		$1\frac{15}{16}$,, $\frac{1}{32}$		4	$1\frac{15}{16}$	
$2\frac{1}{2}$	$3\frac{7}{8}$,, $\frac{1}{64}$		$4\frac{7}{16}$,, $\frac{3}{64}$		$2\frac{3}{16}$		4	$2\frac{3}{16}$	
$2\frac{3}{4}$	$4\frac{3}{16}$		$4\frac{13}{16}$,, $\frac{1}{64}$		$2\frac{3}{8}$,, $\frac{1}{32}$		$3\frac{1}{2}$	$2\frac{3}{8}$,, $\frac{1}{32}$	
3	$4\frac{1}{2}$,, $\frac{1}{32}$		$5\frac{3}{16}$,, $\frac{3}{64}$		$2\frac{5}{8}$		$3\frac{1}{2}$	$2\frac{5}{8}$,, $\frac{1}{64}$	

MELBOURNE IRON & STEEL MILLS PTY. LTD.

TABLE OF WEIGHTS IN POUNDS OF BLACK BOLTS AND NUTS

(Hexagon Head and Nut and Round Neck)

Length of Bolt in Inches from under Head — Diameters in Inches

Length	¼	5/16	⅜	7/16	½	9/16	⅝	¾	⅞	1	1⅛	1¼	1⅜	1½
1	·031	·056	·092	·139	·200	·276	·369	·613						
1⅛	·033	·059	·096	·144	·207	·285	·380	·628						
1¼	·035	·061	·100	·150	·214	·295	·391	·644	·989					
1⅜	·036	·065	·103	·156	·221	·303	·403	·661	1·011					
1½	·038	·068	·108	·161	·228	·312	·414	·677	1·033	1·489				
1⅝	·040	·070	·112	·166	·236	·322	·425	·694	1·055	1·518				
1¾	·042	·073	·116	·172	·243	·330	·436	·709	1·077	1·546	2·118			
1⅞	·044	·076	·120	·177	·250	·340	·448	·725	1·099	1·575	2·177			
2	·046	·078	·124	·183	·257	·349	·458	·742	1·121	1·604	2·214	2·951	3·851	
2¼	·048	·081	·128	·189	·264	·358	·470	·758	1·143	1·632	2·251	2·996	3·904	
2½	·049	·085	·132	·194	·271	·367	·481	·773	1·165	1·661	2·286	3·041	3·959	5·032
2⅝	·051	·087	·136	·199	·279	·376	·492	·790	1·187	1·690	2·323	3·085	4·014	5·097
2¾	·053	·090	·140	·205	·286	·385	·504	·806	1·209	1·718	2·359	3·131	4·067	5·164
2⅞	·056	·095	·149	·216	·300	·404	·526	·838	1·252	1·776	2·432	3·220	4·176	5·290
3	·060	·101	·156	·227	·315	·422	·549	·871	1·296	1·833	2·468	3·309	4·285	5·420
3¼	·064	·107	·164	·238	·329	·439	·571	·903	1·340	1·891	2·577	3·398	4·393	5·549
3½	·067	·112	·173	·248	·343	·458	·592	·935	1·384	1·928	2·650	3·489	4·502	5·678
3¾	·071	·118	·180	·260	·358	·476	·616	·968	1·429	2·005	2·722	3·578	4·610	5·807
4	·074	·123	·189	·270	·372	·494	·638	1·000	1·473	2·062	2·795	3·667	4·718	5·936
4¼	·078	·129	·197	·282	·386	·513	·660	1·032	1·517	2·119	2·867	3·756	4·827	6·065
4½	·081	·135	·205	·292	·401	·531	·683	1·064	1·561	2·177	2·941	3·846	4·936	6·195
4¾	·085	·140	·213	·304	·415	·549	·705	1·097	1·605	2·234	3·013	3·936	5·044	6·323
5	·089	·145	·221	·315	·429	·567	·727	1·129	1·649	2·292	3·085	4·025	5·152	6·452
5¼	·092	·152	·229	·326	·444	·585	·750	1·161	1·692	2·348	3·158	4·114	5·261	6·581
5½	·096	·157	·237	·337	·458	·603	·772	1·193	1·736	2·406	3·230	4·204	5·369	6·701
5¾	·099	·162	·245	·348	·472	·621	·795	1·226	1·780	2·464	3·304	4·293	5·478	6·839
6	·103	·169	·254	·359	·487	·640	·817	1·258	1·824	2·521	3·376	4·383	5·587	6·968
6½	·110	·179	·269	·381	·515	·676	·863	1·323	1·913	2·635	3·521	4·562	5·804	7·227
7	·117	·191	·285	·403	·544	·712	·907	1·388	2·001	2·749	3·666	4·741	6·020	7·485
7½	·124	·202	·302	·425	·573	·749	·952	1·452	2·088	2·865	3·812	4·920	6·238	7·743
8		·213	·319	·447	·601	·785	·997	1·517	2·176	2·979	3·957	5·098	6·455	8·001
8½			·334	·469	·631	·822	1·041	1·581	2·264	3·094	4·102	5·278	6·571	8·259
9				·491	·659	·857	1·086	1·646	2·353	3·208	4·248	5·456	6·888	8·517
9½					·687	·876	1·131	1·710	2·441	3·323	4·393	5·636	7·106	8·775
10						·931	1·177	1·774	2·528	3·437	4·531	5·814	7·322	9·033
10½							1·221	1·839	2·616	3·553	4·684	5·993	7·529	9·292
11								1·904	2·704	3·667	4·828	6·172	7·757	9·550
11½									2·793	3·782	4·973	6·351	7·978	9·808
12										3·896	5·119	6·531	8·191	10·066

To ascertain the weight of any bolt and nut having other forms of head and nut, take the weight as shown above and add or deduct the amounts given in the table on next page.

TABLE OF WEIGHTS IN POUNDS OF BOLTS AND NUTS

See Footnote on previous page

DIAMETERS IN INCHES

	$\frac{3}{4}$	$\frac{5}{8}$	$\frac{9}{16}$	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{3}{8}$	$\frac{5}{16}$	$\frac{1}{4}$
For square head add	·0274	·0156	·0110	·0079	·0052	·0033	·0019	·0009
For square nut add	·0308	·0180	·0128	·0091	·0061	·0038	·0022	·0011
For cup head deduct	·1359	·0780	·0574	·0399	·0287	·0167	·0097	·0050
For square neck add	·0251	·0146	·0106	·0074	·0047	·0031	·0016	·0009

DIAMETERS IN INCHES

	2	$1\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{3}{8}$	$1\frac{1}{4}$	$1\frac{1}{8}$	1	$\frac{7}{8}$
For square head add	·5097	·3214	·2154	·1655	·1255	·0843	·0637	·0427
For square nut add	·5874	·4210	·2487	·1912	·1410	·0974	·0735	·0493
For cup head deduct	2·562	1·711	1·073	·8330	·6263	·4045	·3196	·2151
For square neck add	·4783	·3296	·2012	·1593	·1208	·0804	·0600	·0397

ROCKWELL AND BRINELL HARDNESS TABLES

The tables shown on the opposite page are given for ascertaining the tensile strength of steel by means of the Rockwell or Brinell machines.

These relative values are merely averages of results obtained by different investigators on different classes of steel on different machines, and are only of approximate validity for any one grade of material.

The Brinell impression tests are made with a 10 m.m. diameter (D) ball with a standard load (P) of 3000 k.g. (6614 lbs.). The Brinell Hardness Numeral is calculated according to the formula :

$$H = \frac{P}{\frac{\pi D}{2}\left(D - \sqrt{D^2 - d^2}\right)}$$

("d" is the diameter of the impression.)

The "C" scale Rockwell determinations are made with a conical diamond "BRALE" penetrator and 150 k.g. major load. The readings are taken on the black figured C scale.

The "B" Scale Rockwell determinations are made with $\frac{1}{16}$" diam. steel ball and 100 k.g. major load. The readings are taken on the red figured B scale.

The tables do not apply to specially high alloyed steels such as 25%, nickel steel, alloyed hard steel, etc., nor to cast iron chilled castings, or non-ferrous metals. As regards all other steels and iron the tensile strength, determined by either the Rockwell or Brinell impression test and the tables, corresponds very closely (probably within 5%) to the ultimate tensile strength of a tensile test taken at the same point.

MELBOURNE IRON & STEEL MILLS PTY. LTD.

Comparison Rockwell and Brinell Hardness

Tons per sq. inch	Brinell 3000 kg. load		Rock-well C Scale	Tons per sq. inch	Brinell 3000 kg. load		Rock-well B Scale
	Diam. mm.	Brinell No.			Diam. mm.	Brinell No.	
172	2·2	782		48	4·05	223	97
163	2·25	745		46	4·1	217	96
155	2·3	712		45	4·15	212	95
150	2·35	682	65	44	4·2	207	94
143	2·4	653	63	43	4·25	201	93
138	2·45	627	61	42	4·3	197	92
130	2·5	601	59	41	4·35	192	91
124	2·55	575	57	40	4·4	187	90
119	2·6	555	55	40	4·45	183	89
114	2·65	534	54	39	4·5	179	88
110	2·7	514	53	39	4·55	174	87
106	2·75	495	51	38	4·6	170	86
103	2·8	477	49	38	4·65	167	85
100	2·85	461	48	37	4·7	163	84
96	2·9	444	47	37	4·75	159	83
93	2·95	429	45	36	4·8	156	82
90	3·0	415	44	35	4·85	152	81
87	3·05	401	43	34	4·9	149	80
84	3·1	388	42	34	4·95	146	79
81	3·15	375	40	33	5·0	143	78
78	3·2	363	39	32	5·05	140	77
75	3·25	352	38	32	5·1	137	75
73	3·3	341	37	31	5·15	134	74
71	3·35	331	36	30	5·2	131	72
69	3·4	321	35	30	5·25	128	71
67	3·45	311	34	29	5·3	126	70
65	3·5	302	33	29	5·35	123	69
63	3·55	293	31	28	5·4	121	68
62	3·6	285	30	27	5·45	118	67
60	3·65	277	29	27	5·5	116	65
58	3·7	269	28	26	5·55	114	64
56	3·75	262	26	26	5·6	111	63
55	3·8	255	25	25	5·65	109	61
53	3·85	248	24	25	5·7	107	60
52	3·9	241	22	24	5·75	105	58
51	3·95	235	21	24	5·8	103	57
49	4·0	230	20	23	5·85	101	56

DECIMAL EQUIVALENTS

Exact Decimal Equivalents of
Fractions

Fractions				Decimals	Fractions				Decimals
$1/64$	..	..	..	·015625	$33/64$	..	..	..	·515625
..	$\frac{1}{32}$	..	..	·03125	..	$\frac{17}{32}$	..	..	·53125
$3/64$	..	..	..	·046875	$35/64$	..	..	..	·546875
..	..	$\frac{1}{16}$	..	·0625	..	..	$\frac{9}{16}$	..	·5625
$5/64$	..	..	..	·078125	$37/64$	..	..	..	·578125
..	$\frac{3}{16}$	..	..	·09375	..	$\frac{19}{32}$	..	..	·59375
$7/64$	..	..	..	·109375	$39/64$	..	..	..	·609375
..	..	..	$\frac{1}{8}$	·125	..	..	..	$\frac{5}{8}$	·625
$9/64$	..	..	..	·140625	$41/64$	..	..	..	·640625
..	$\frac{5}{32}$	..	..	·15625	..	$\frac{21}{32}$	..	..	·65625
$11/64$	..	..	..	·171875	$43/64$	..	..	..	·671875
..	..	$\frac{3}{16}$	..	·1875	..	..	$\frac{11}{16}$	..	·6875
$13/64$	..	..	..	·203125	$45/64$	..	..	..	·703125
..	$\frac{7}{32}$	..	..	·21875	..	$\frac{23}{32}$	..	..	·71875
$15/64$	..	..	..	·234375	$47/64$	..	..	..	·734375
..	..	..	$\frac{1}{4}$	·25	..	..	..	$\frac{3}{4}$	·75
$17/64$	..	..	..	·265625	$49/64$	..	..	..	·765625
..	$\frac{9}{32}$	..	..	·28125	..	$\frac{25}{32}$	..	..	·78125
$19/64$	..	..	..	·296875	$51/64$	..	..	..	·796875
..	..	$\frac{5}{16}$	..	·3125	..	..	$\frac{13}{16}$	..	·8125
$21/64$	..	..	..	·328125	$53/64$	..	..	..	·828125
..	$\frac{11}{32}$	..	..	·34375	..	$\frac{27}{32}$	..	..	·84375
$23/64$	..	..	..	·359375	$55/64$	..	..	..	·859375
..	..	..	$\frac{3}{8}$	·375	..	..	..	$\frac{7}{8}$	·875
$25/64$	..	..	..	·390625	$57/64$	..	..	..	·890625
..	$\frac{13}{32}$	..	..	·40625	..	$\frac{29}{32}$	..	..	·90625
$27/64$	..	..	..	·421875	$59/64$	..	..	..	·921875
..	..	$\frac{7}{16}$	..	·4375	..	..	$\frac{15}{16}$	..	·9375
$29/64$	..	..	..	·453125	$61/64$	..	..	..	·953125
..	$\frac{15}{32}$	..	..	·46875	..	$\frac{31}{32}$	..	..	·96875
$31/64$	..	..	..	·484375	$63/64$	..	..	..	·984375
..	..	..	$\frac{1}{2}$	·5	..	..	..	1	1·00

WEIGHTS OF VARIOUS MATERIALS

Material	Per cubic foot in lbs.	Material	Per cubic foot in lbs.
Aluminium	162	Coke	60
Brass, cast	525	Concrete, Portland	
,, wire	534	Cement	130
Bronze	513	Earth, loamy	80
Copper, cast	550	Glass, plate	184
,, sheet and wire	555	Gravel, coarse, mixed	
Gold, pure	1210	with sand	110
,, standard	1108	Granite, Aberdeen	
Iron, wrought	485	grey	167
,, cast	450	Ice	57½
Lead, cast	710	Ivory	114
Mercury, fluid	848	India-rubber	62
Nickel, cast	788	Limestone, magnesian	145
Platinum, pure	1220	Lime, ordinary quick	
Pewter	453	(of stone)	55
Silver, standard	658	Marble, average	170
Steel	490	Masonry, rubble	140
Tin, cast	456	Pumice stone	57
Zinc	450	Quartz	166
Basalt	182	Sand, river	118
Bitumen	62	,, pit, clean coarse	100
Brick, common		Sandstone, Craigleith	145
London stock	115	Slate, Welsh	181
,, red facing	130	Snow (in England)	3 to 10
,, fire	150	Tar, Coal	63
Brickwork in cement	115	Ash	50
Cement, Portland	86	Cedar, American	41
Cement, Portland, and		Cork	15
sand equal parts	130	Ebony, Indian	70
Cement, Roman, and		Iron Bark	64
sand equal parts	112	Jarrah	51
Chalk, solid	125	Lignum-vitae	80
Charcoal, from pine	18	Oak, English	50
Clay, ordinary	120	Pine, Red American	36
Coal, solid	80	Stringy Bark	54

LIVE LOADS IN BUILDINGS

Most building regulations treat the live or superimposed load on a floor as equivalent to an assumed dead or stationary load. For floors carrying machinery with heavy moving parts, special calculation is necessary. A comparison of floor loads, as stipulated in the by-laws of capital cities of the Commonwealth, is given below.

Superimposed Floor Loads in Lbs. per Sq. Ft.
(In Terms of Dead Loading)

	Sydney	Melbourne	Adelaide	Brisbane	Perth
	1917	1923	1923	1926	1929
Dwellings	50	70	50	70	75
Offices	60	84	60	84	100
Retail Shops	100	140	100	140	120
Places of Assembly	100	140	100	140	120
Ball Rooms and Drill Halls	150	—	150	—	150
Book Stores, Libraries and Museums	200	—	200	—	—
Workshops and Factories	100	140	100	140	According to use
Warehouses	150	168	150	168	220 to 670
Hardware, Machinery, Paper Stores, and Printeries	300	—	300	—	—
Flat Roofs	120	70	120	70	—
Horizontal Wind Pressure	30*	25	25	25	—

*Where combined direct and bending stress due to wind is considered, a working stress of 25% in excess of that allowed in tension or compression may be used (Sydney).

EQUIVALENTS OF DEGREES

Centigrade in Fahrenheit

Degrees Centigrade	Degrees Fahrenheit	Degrees Centigrade	Degrees Fahrenheit	Degrees Centigrade	Degrees Fahrenheit	Degrees Centigrade	Degrees Fahrenheit
0	32	340	644	680	1256	1020	1868
10	50	350	662	690	1274	1030	1886
20	68	360	680	700	1292	1040	1904
30	86	370	698	710	1310	1050	1922
40	104	380	716	720	1328	1060	1940
50	122	390	734	730	1346	1070	1958
60	140	400	752	740	1364	1080	1976
70	158	410	770	750	1382	1090	1994
80	176	420	788	760	1400	1100	2021
90	194	430	806	770	1418	1110	2030
100	212	440	824	780	1436	1120	2048
110	230	450	842	790	1454	1130	2066
120	248	460	860	800	1472	1140	2088
130	266	470	878	810	1490	1150	2102
140	284	480	896	820	1508	1160	2120
150	302	490	914	830	1526	1170	2138
160	320	500	932	840	1544	1180	2156
170	338	510	950	850	1562	1190	2174
180	356	520	968	860	1580	1200	2192
190	374	530	986	870	1598	1210	2210
200	392	540	1004	880	1616	1220	2228
210	410	550	1022	890	1634	1230	2246
220	428	560	1040	900	1652	1240	2264
230	446	570	1058	910	1670	1250	2282
240	464	580	1076	920	1688	1260	2300
250	482	590	1094	930	1706	1270	2318
260	500	600	1112	940	1724	1280	2336
270	518	610	1130	950	1742	1290	2354
280	536	620	1148	960	1760	1300	2372
290	554	630	1166	970	1778	1310	2390
300	572	640	1184	980	1796	1320	2408
310	590	650	1202	990	1814	1330	2426
320	608	660	1220	1000	1832	1340	2444
330	626	670	1238	1010	1850	1350	2462

WEIGHTS AND MEASURES
ENGLISH AND METRIC EQUIVALENTS

1 pound (1 lb.)	= 453·6 grammes
100 lbs.	= 45·36 kilos.
112 lbs.	= 50·80 kilos.
1 net ton (2000 lbs.)	= 907·2 kilos.
1 gross ton (2240 lbs.)	= 1016 kilos.
1 kilo.	= 2·2046 lbs.
100 kilos.	= 220·46 lbs.
1 metric ton (1000 kilos.)	= 2204·6 lbs. = 0·9482 gross tons = 1·1023 net tons
1 inch	= 25·40 millimetres
1 foot (12 inches)	= 30·48 centimetres
1 yard (3 feet)	= 91·44 centimetres
1 mile (1760 yards)	= 1609·35 metres
1 millimetre	= 0·03937 inch
1 centimetre	= 0·3937 inch
1 metre	= 39·37 inches = 3·2808 feet
1 kilometre	= 0·62137 mile = 1093·6 yds.
1 square inch	{ = 6·4516 square centimetres / = 645·16 square millimetres
1 square foot	= 0·0929 square metre
1 square yard	= 0·8361 square metre
1 square millimetre	= 0·00155 square inch
1 square centimetre	= 0·155 square inch
1 square metre	{ = 10·7639 square feet / = 1·196 square yards
1 pound per foot	= 1·4882 kilos. per metre
1 pound per yard	= 0·4961 kilo. per metre
1 pound per sq. inch	= 0·0703 kilo. per sq. centimetre
1 pound per sq. foot	= 4·8825 kilos. per sq. metre
1 kilo. per metre	= 0·6720 pound per foot
1 kilo. per sq. millimetre	= 1422·32 pounds per sq. inch
1 kilo. per sq. centimetre	= 14·2232 pounds per sq. inch
1 kilo. per sq. metre	{ = 0·2048 pound per sq. foot / = 1·8433 pounds per sq. yard

HEAT COLOURS

Steel, at the temperatures shown, when seen in a dark place, has approximately the following heat colours :—

Temperature :		Colour :
° Fahr.	° Cent.	
2280-2370	1250-1300	White
2100-2280	1150-1250	Yellow
1900-2100	1050-1150	Dull Yellow
1620-1920	880-1050	Orange
1530-1620	830-880	Bright Red
1470-1530	800-836	Bright Cherry Red
1440-1470	780-800	Cherry Red
1380-1440	750-780	Dull Cherry Red
1200-1380	750-650	Dull Red
1080-1200	580-650	Brown Red
970-1080	520-580	Dull Brown

INDEX

SPECIAL SECTIONS

Full Size

CHANNELS

63

64

MILK CAN SECTION

65